**PROFESSIONAL DEVELOPMENT TOOLKIT
FOR NEW AND BEGINNING TEACHERS**

TECHNOLOGY USE AND INTEGRATION

SEGMENT #4: USING TECHNOLOGY TO ENGAGE STUDENTS
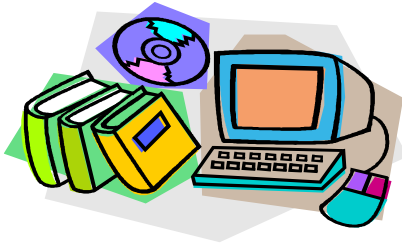
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Virginia Commonwealth University

The Commonwealth Educational Policy Institute

L. Douglas Wilder School of Government and Public Affairs

Richmond, Virginia

PROFESSIONAL DEVELOPMENT TOOLKIT
FOR
NEW AND BEGINNING TEACHERS

A project administered by

The Commonwealth Educational Policy Institute
L. Douglas Wilder School of Government and Public Affairs
Virginia Commonwealth University

Dr. William C. Bosher, Jr. Executive Director and Distinguished Professor
Dr. Ida J. Hill, Executive Producer and Project Director
Gloria K. Barber, Project Assistant

Developed and produced in cooperation with
Henrico County Public Schools Staff Development & Productions

Director and Project Advisor/Facilitator
Dr. Christopher Corallo

Asst. Director and Project Advisor
Ms. Linda Thompson

Production Facilities
Henrico County Public Schools Central Office and Varina High School
David Saunders, Production Director

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Professional Development Toolkit for
New and Beginning Teachers

The PROFESSIONAL DEVELOPMENT TOOLKIT FOR NEW AND BEGINNING TEACHERS is a research-based video streamed program with accompanying resource documents. The program is an outgrowth of a previous Commonwealth Educational Policy Institute (CEPI) online mentoring study at Virginia Commonwealth University. The findings of the online mentoring study revealed twelve topics new and beginning teachers felt additional university training would have led them to more effective use of best practices in the classroom. In this program, each of the twelve topics is presented in two to six stand alone video segments. The total number of segments is forty five. Suggested uses, in addition to personal viewing by K-12 teachers for self improvement, include professional development, mentor and mentee, university prospective teacher, and small or large group training.

The facilitators are university faculty and practitioners with field experience. Each is currently involved in teacher training or serves as a staff development administrator. All are currently engaged in educational research, teaching and/or educational policy development.

The teachers in the video programs are classroom teachers. Some of them were participants in the 2006 Online Mentoring Study in which the topics for this project were identified. They represent all disciplines in K-12 grades.

Resource documents for the programs are provided as PDF files to facilitate the use of the 45 video segments. The first set of documents is composed of: (1) a description of the project, (2) an introduction to program facilitators, including a definition of each topic, and a list of the video segments, and (3) a research formative study summary that helped to guide the project's development. The second set of documents is composed of: (1) a description of the project, (2) a full text transcript for each video segment, (3) a set of problems and solutions related to each video segment in the form of a work-study guide, and (4) an annotated bibliographic summary of references and Internet links for each transcript. Many of the organizations and agencies referenced in the transcripts are actively involved in the development of video and professional development presentations that support policy and advocacy.

Every reasonable effort is made to present current and accurate information. Internet content, however, does appear, disappear and change over time. CEPI, as a university-based educational policy research institute endorses no specific position of any listed group.

TECHNOLOGY INTEGRATION

SEGMENT #4: USING TECHNOLOGY TO ENGAGE STUDENTS

🗁 TRANSCRIPT

Technology Use and Integration: Ability and skills necessary to make use of technology as an instructional and evaluative tool to assist the development of such skills as critical thinking, test taking, and problem solving.

Facilitator: Dr. Bill Bosher, Jr. Distinguished Professor
Educational and Government Leadership and School Improvement
Virginia Commonwealth University.

AUDIO	VIDEO
Technology has the potential to be a powerful, effective learning tool. It can accelerate, enrich and deepen student understanding of basic skills; motivate and engage students, and strengthen teaching and learning. I am Bill Bosher, Executive Director of the Commonwealth Educational Policy Institute and VCU Distinguished Professor of Public Policy and Education. In this segment I want to share with you how teachers use this powerful learning tool to engage all students. What does engaged learning look like? Successful, engaged learners are responsible for their own learning. These students are self-regulated and able to define their own learning goals and evaluate their own achievement. They are also energized by their learning; their joy of learning leads to a lifelong passion for solving problems, understanding, and taking the next step in their thinking. These learners are strategic in that they know how to learn and are able to transfer knowledge to solve problems creatively. Engaged learning also involves being collaborative--that is, valuing and having the skills to work with others. Technology tools and resources are especially useful when planning instruction for students who need extra help. Students may have learning disabilities, or physical impairments; they may be English as a Second Language students, or they may simply be slow learners. The resources of the Internet and other technology-based instructional programs provide challenging learning experiences for all categories of students, They target individual learning needs. These students are often referred to as at-risk because such as factors social, emotional and intellectual growth and development have a considerable impact on academic achievement. Demonstration efforts and anecdotal evidence suggest that teaching information and communication technology skills (specifically those related to multimedia literacy in Web, publishing and video production) can improve the economic prospects of at-risk youth by giving them marketable skills.	DR. BOSHER

Let's take a few moments to highlight a few ways that technology supports efforts of teachers to engage all learners.

- Teachers can add an element of creativity to lessons by using web activities, graphics, color and sound to illustrate concepts;
- Computer and Internet-based assignments offer students the opportunity to work at their own pace. Teachers have the flexibility to structure tasks to allow for different solutions depending on skills and strategies employed by students.
- Students can use a variety of communication tools such as e-mail, bulletin boards, and podcasts to demonstrate learning
- Access resources not found locally.
- Learning becomes meaningful when technology is used. Teachers can create and implement lessons that give students opportunities to learn and practice basic skills in the context of working on authentic tasks
- Learning becomes meaningful using technology. Teachers can create and implement lessons that give students opportunities to learn and practice basic skills in the context of working on authentic tasks

Now, let's ask our teachers to describe their experiences using technology to engage all students.

I'm Emily Hedstrom, and I've been teaching for one year. I teach 6-8th grade social studies. As I've explored ways to draw my students in this year, I've found that nothing engages students more than visual and auditory stimuli. As a social studies teacher, pictures are hugely important, and I find that they create an environment that is ripe for discussion. My 7th graders were enthralled by pictures of immigrants in the late 1800s and by life in the cities at the turn of the century. After we had already taken notes on the topics, I projected images from the time-period and asked questions about what we were seeing. They were eager to use their knowledge to tell me how they understood the photos. At one point, I used photos to give a visual aide for a writing prompt. Once they had finished writing, I allowed them to type their story and find their own photo online to include with it– CITATIONS, PLEASE!	EMILY HEDSTROM
My civics students really enjoyed using the AppleWorks paint program to create their own diagram of the branches and levels of the government. They enjoyed adding creative elements while they worked with the material and their notes to ensure accuracy of information.	
My name is Allison Sapp. I am a middle school math teacher. I have been a teacher for 1 full year. I have a Promethean Board in my classroom. All of my students love it! The percentage of participation in activities involving the Board is 100%. Students identify and correct their mistakes, pay attention to mistakes made by others, earn points, and enjoy team play. A Promethean Board is an interactive whiteboard. Students can use the Board to play meaningful games, manipulate items, and be actively engaged in many classroom activities. The Promethean Board also provides opportunities for teachers to share ideas with other teachers in other schools through the use of email, blogs, and attachments	ALLISON SAPP

When we walk through the mall, we can see young people who can multi-task. They're using their gameboy, and headsets, they're talking to their friends, walking and chewing gum at the same time. If they think that we are just tapping on the chalkboard, we have lost our connection before we start. Technology is a way to engage students in learning.	**DR. BOSHER**

📁 PROBLEMS AND SOLUTIONS

Ask yourself:

How am I using technology personally? How do I incorporate technology into my teaching? What new techniques do I want to try in the future?

Suggested use for this module:

1. Analyze:

Please select one of the scenarios below and problem-solve a list of possible solutions. Record your ideas in the space provided. Discuss these ideas with your other educators (mentor, colleagues, or other beginning teachers).

2. View:

Watch the corresponding video on this topic. How does this information change your ideas?

3. Compare:

Revisit the scenario selected. Next, review the section entitled, "Possible Solutions" comparing the ideas listed with your own list.

4. Reflect:

How will you apply this new information to your current or future classroom? What goal will you set to help you begin to change your practices? What support is needed to help you accomplish this goal?

5. Apply:

List the first step towards change below. Create a timeline for success and place deadlines in your personal planner as a reminder. How will you know when you have met your goals?

Scenarios 1 & 2: Technology Use and Integration

Scenario 1

Don: "My students are all technology natives using digital materials in almost every aspect of their lives. They use technology for text messaging, viewing websites and movies, downloading music, playing video game systems, and researching for their homework assignments. I find it challenging to incorporate less paper and more technology into my classroom. I feel that there is a disconnect between my students and my teaching methods."

How does Don's classroom compare with your own teaching experiences?

Scenario 2

Susan: "I love using multimedia in my classroom. I am currently using digital tools to take digital field trips on my content and for student's to publish their writing. Student's also complete literature circles on the classroom laptops, discussing the novels we have been reading. Although my students enjoy these activities, I would like to try something new for my next teaching unit."

What ideas do you have for Susan to try? How does your classroom compare with her methods?

Circle the scenario that you selected below:

Scenario 1   Scenario 2

Record a list of your own possible solutions here:

Summary & Goal Setting:

POSSIBLE SOLUTIONS

Integrating technology into your teaching will enhance learner engagement and improve understanding of content knowledge. Use digital tools to share knowledge and link learning with real-world experiences in real-time formats. Technology is a useful tool for teaching students to solve problems for themselves, improving interactions with others with diverse backgrounds, and tracking learning across time.

Teacher Time-Saving Solutions:

- Utilize email to increase the speed of communication and improve your access to information.

- Convert paper processes to digital processes to eliminate administrative bottlenecks

- Scan copies of student work to create e-portfolios and to share progress with families

- Use presentation software to create countdown clocks, test reviews in game show formats, and provide visuals during instruction.

Integrating Technology into Instruction:

- Encourage students to chat about content or key ideas on your teaching unit in a shared classroom forum (word processing, internet)

- Teach students to use technology to display, gather, and analyze information (Possible tools: webs and organizers, word processing, databases, and spreadsheets)

- Encourage students to work in cooperative groups to share information (presentation software)

- Create classroom outlines, idea maps, storyboards, and graphic organizers (word processing, software)

- Incorporate electronic fieldtrips to virtually visit places of study (internet)

- Seek information to unanswered questions (Research and information retrieval, search engines)

- Design a WebQuest for inquiry-oriented learning (internet)

- Organize student presentations and group work (word processing, presentation software)

- Collaborate with other students learning about the same topic (internet, word processing, video)

- Utilize digital cameras to:

  - ✓ take photos of class experiences and write about them

  - ✓ use photos for graphing or sequencing activities

  - ✓ inspire creative writing

  - ✓ create an alphabet book which summarizes key learning in any subject area

  - ✓ email as an attachment for families in a good news message

  - ✓ insert photos as newsletter illustrations

  - ✓ build vocabulary for all learners (especially ELL students)

  - ✓ to compare different ecosystems or habitats

- ✓ teach specific skills (such as simile and metaphors)

- ✓ create a brochure or power point for a unit of study

Most school divisions have technology specialists who can co-teach or share teaching resources. Find out who serves in this capacity in your building and request support!

📁 ANNOTATED RESEARCH BIBLIOGRAPHY

❖ Mentors need to remind beginning teachers to not underestimate the amount of work involved in making technological transitions both for themselves and for their students.

Runge, A.: Speigel, A.: Pytlik, L.: Dunbar, S.; Fuller, R., Sowell, G. & Brooks, D. (1999). *Hands-on computer use in science classrooms: The skeptics are still waiting.* Journal of Science Education and Technology, 8(1), p.33-44.

❖ Research points to time as the major instructional concern. The technological learning curve has a huge time component. Mentors should try to help new teachers make realistic time estimates for learning or teaching. Many new technology and have them be prepared to let go of some other parts of their curriculum or instructional activities.

Niguidula, D. (1997). *Picturing performance with digital portfolios.* Educational Leadership, 99(3), p. 26-29.

❖ It is essential that new teachers take time to survey and evaluate the potential that specific Internet sites offer. Technology has its quirks and breakdowns, and access may not be available on demand or on the class's schedule; mentors may need to remind new teachers to include alternatives in their lesson planning just in case problems arise.

Mistler-Jackson, M. & Songer, N. (2000). *Student motivation and internet technology: Are students empowered to learn science?* Journal of Research in Science Teaching, 37(5), p. 459-479.

❖ The RAC (research, analysis, and communication) model is an instructional framework for integrating technology into the curriculum through lesson planning and assessment across subjects and grade levels.
  - Research: students gather information from various sources
  - Analysis: data analysis depends upon the results of the research
  - Communication: students prepare products to share their results

Bowens, E. M. (2000). *Meeting standards with technology..* Retrieved October 18, 2007, from www.iste.org

❖ Research suggests that teachers identified the following benefits of RAC- based (research, analysis, and communication) lesson planning:
  - It allows for more student-centered learning.
  - Students engage in more critical thinking.
  - Material can be integrated across subject areas
  - It is easily incorporated into performance-based classrooms.
  - Students are required to apply important skills in a meaningful context.
  - It provides opportunities to evaluate students' work.

Bowens, E. M. (2000). *Meeting standards with technology.* Retrieved October 18, 2007, from www.iste.org

BIBLIOGRAPHY

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